

RICK D. NYDEGGER  
 BRENT P. LORIMER  
 THOMAS R. VUKSINICK  
 LARRY R. LAYCOCK  
 JONATHAN W. RICHARDS  
 DAVID R. WRIGHT  
 JOHN C. STRINGHAM  
 JOHN M. GUYNN  
 CHARLES L. ROBERTS  
 DANA L. TANGREN  
 ERIC L. MASCHOFF  
 CHARLES J. VEYERKA  
 ROBYN L. PHILLIPS  
 RICHARD C. GILMORE \*  
 STERLING A. BRENNAN  
 R. BURNS ISRAELSEN  
 DAVID R. TODD  
 GREGORY M. TAYLOR  
 DAVID B. DELLENBACH  
 L. DAVID GRIFFIN  
 ADRIAN J. LEE  
 FRASER D. ROY  
 CARL T. REED



R. PARRISH FREEMAN, JR.  
 PETER F. MALEN, JR.  
 L. REX SEARS, PH.D.  
 WILLIAM R. RICHTER  
 ERIC M. KAMERATH  
 ROBERT E. AYCOCK  
 JAMES C. JENKINS  
 KEVIN W. STINGER  
 WILLIAM J. ATHAY  
 MICHAEL B. DODD  
 RYAN D. BENSON  
 SARA D. JONES  
 TIGE KELLER  
 JANNA L. JENSEN  
 MATTHEW D. TODD  
 J. LAVAR OLDHAM  
 MICHAEL J. FRODSHAM  
 JOSEPH L. KRUPA  
 BRETT A. HANSEN  
 BRETT I. JOHNSON  
 MATTHEW A. BARLOW  
 WESLEY C. ROSANDER  
 ANDREW S. HANSEN  
 CHAD E. NYDEGGER  
 JOSEPH G. PIA  
 CLINTON E. DUKE  
 DAVID J. LORENZ †  
 RYAN N. FARR \*  
 JAMES B. BELSHE  
 ALISON B. MOHR

VERNON R. RICE §  
 OF COUNSEL

# WORKMAN | NYDEGGER

INTELLECTUAL PROPERTY ATTORNEYS



## Certificate OCT 22 2004 of Correction

CAC/\$  
 1000 EAGLE GATE TOWER  
 60 EAST SOUTH TEMPLE  
 SALT LAKE CITY, UTAH 84111  
 TELEPHONE: (801) 533-9800  
 FAX: (801) 328-1707  
 WEBSITE: HTTP://WWW.WNLAW.COM

PATENT  
 Docket No. 15689.48

### IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of		)
		)
	Sadayuki Abeta et al.	)
		)
Serial No.:	09/375,906	) Art Unit
		) 2689
Filed:	August 17, 1999	)
		)
For:	CHANNEL ESTIMATION UNIT, AND RECEIVER	)
	AND CDMA TRANSCEIVER WITH CHANNEL	)
	ESTIMATION UNIT	)
		)
Examiner:	Alan Gantt	)
		)
Patent No.:	6,757,272 B1	)
		)
Issue Date:	June 29, 2004	)

### REQUEST FOR A CERTIFICATE OF CORRECTION UNDER 37 C.F.R. § 1.323

Commissioner for Patents  
 P.O. Box 1450  
 Alexandria, VA 22313-1450

Sir:

In accordance with the provisions of 37 C.F.R. § 1.323 which implement 35 U.S.C. § 255, the Commissioner is respectfully requested to issue a Certificate of Correction to correct mistakes in the above-identified patent. The enclosed Patent Office Form 1050 reflects the desired corrections. Also enclosed please find a check for the amount of \$100.00 to cover the costs for issuance of this certificate.

10/18/2004 MBEYENE1 00000150 09375906

01 FC:1811 100.00 OP

10/18/2004 MBEYENE1 00000150 09375906

01 FC:1811 100.00 OP

Admitted only in California  
 † Admitted only in New York  
 § Admitted only in Virginia

25 OCT 2004

10/20/2004 MBEYENE1 00000150 09375906  
 01 FC:1811

The Commissioner is hereby authorized to charge payment of any fees associated with this communication or credit any overpayment to Deposit Account No. 23-3178. Duplicate copies of this letter are enclosed.

Dated this 7th day of October, 2004.

Respectfully submitted,



Adrian J. Lee  
Attorney for Patentee  
Registration No. 42,785  
Customer No. 022913

AJL:jjb  
Docket: 15689.48  
PR0000000318V001

CERTIFICATE OF DEPOSIT UNDER 37 C.F.R. § 1.8

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail, postage prepaid, in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this 12th day of October, 2004.



Transmitted: REQUEST FOR A CERTIFICATE OF CORRECTION UNDER 37 C.F.R. § 1.323,  
PTO Form 1050 and Check No. 139187 for \$100.00

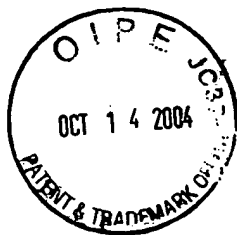
25 OCT 2004

RICK D. NYDEGGER  
 BRENT P. LORIMER  
 THOMAS R. VUKSINICK  
 LARRY R. LAYCOCK  
 JONATHAN W. RICHARDS  
 DAVID R. WRIGHT  
 JOHN C. STRINGHAM  
 JOHN M. GUYNN  
 CHARLES L. ROBERTS  
 DANA L. TANGREN  
 ERIC L. MASCHOFF  
 CHARLES J. VEVERKA  
 ROBYN L. PHILLIPS  
 RICHARD C. GILMORE \*  
 STERLING A. BRENNAN  
 R. BURNS ISRAELSEN  
 DAVID R. TODD  
 GREGORY M. TAYLOR  
 DAVID B. DELLENBACH  
 L. DAVID GRIFFIN  
 ADRIAN J. LEE  
 FRASER D. ROY  
 CARL T. REED

# WORKMAN | NYDEGGER

INTELLECTUAL PROPERTY ATTORNEYS

1000 EAGLE GATE TOWER  
 60 EAST SOUTH TEMPLE  
 SALT LAKE CITY, UTAH 84111  
 TELEPHONE: (801) 533-9800  
 FAX: (801) 328-1707  
 WEBSITE: HTTP://WWW.WNLAW.COM



PATENT  
 Docket No. 15689.48

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of

Sadayuki Abeta et al.

Serial No.: 09/375,906

Filed: August 17, 1999

For: CHANNEL ESTIMATION UNIT, AND RECEIVER  
 AND CDMA TRANSCEIVER WITH CHANNEL  
 ESTIMATION UNIT

Examiner: Alan Gantt

Patent No.: 6,757,272 B1

Issue Date: June 29, 2004

) Art Unit  
 ) 2689

### REQUEST FOR A CERTIFICATE OF CORRECTION UNDER 37 C.F.R. § 1.323

Commissioner for Patents  
 P.O. Box 1450  
 Alexandria, VA 22313-1450

Sir:

In accordance with the provisions of 37 C.F.R. § 1.323 which implement 35 U.S.C. § 255, the Commissioner is respectfully requested to issue a Certificate of Correction to correct mistakes in the above-identified patent. The enclosed Patent Office Form 1050 reflects the desired corrections. Also enclosed please find a check in the amount of \$100.00 to cover the costs for issuance of this certificate.

R. PARRISH FREEMAN, JR.  
 PETER F. MALEN, JR.  
 L. REX SEARS, PH.D.  
 WILLIAM R. RICHTER  
 ERIC M. KAMERATH  
 ROBERT E. AYCOCK  
 JENS C. JENKINS  
 KEVIN W. STINGER  
 WILLIAM J. ATHAY  
 MICHAEL B. DODD  
 RYAN D. BENSON  
 SARA D. JONES  
 TIGE KELLER  
 JANNA L. JENSEN  
 MATTHEW D. TODD  
 J. LAVAR OLDHAM  
 MICHAEL J. FRODSHAM  
 JOSEPH L. KRUPA  
 BRETT A. HANSEN  
 BRETT I. JOHNSON  
 MATTHEW A. BARLOW  
 WESLEY C. ROSANDER  
 ANDREW S. HANSEN  
 CHAD E. NYDEGGER  
 JOSEPH G. PIA  
 CLINTON E. DUKE  
 DAVID J. LORENZ †  
 RYAN N. FARR \*  
 JAMES B. BELSHE  
 ALISON B. MOHR

VERNON R. RICE §  
 OF COUNSEL

\* Admitted only in California  
 † Admitted only in New York  
 § Admitted only in Virginia

25 OCT 2004

The Commissioner is hereby authorized to charge payment of any fees associated with this communication or credit any overpayment to Deposit Account No. 23-3178. Duplicate copies of this letter are enclosed.

Dated this 7<sup>th</sup> day of October, 2004.

Respectfully submitted,



Adrian J. Lee  
Attorney for Patentee  
Registration No. 42,785  
Customer No. 022913

AJL:jjb  
Docket: 15689.48  
PR0000000318V001

CERTIFICATE OF DEPOSIT UNDER 37 C.F.R. § 1.8

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail, postage prepaid, in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this 12<sup>th</sup> day of October, 2004.



Transmitted: REQUEST FOR A CERTIFICATE OF CORRECTION UNDER 37 C.F.R. § 1.323,  
PTO Form 1050 and Check No. 139187 for \$100.00

25 OCT 2004

UNITED STATES PATENT AND TRADEMARK OFFICE  
**CERTIFICATE OF CORRECTION**

PATENT NO. : 6,757,272 B1  
DATED : June 29, 2004  
INVENTOR(S) : Sadayuki Abeta et al.

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

Column 1

Line 22, change "Raleigh" to --Rayleigh--  
Line 42, change "Raleigh" to --Rayleigh--

Column 2

Line 2, change "Raleigh" to --Rayleigh--  
Line 13, after "estimates" change "ξ" to --ξ̃--  
Line 31, after "slots" change "are" to --to be--  
Line 31, after "estimates" change "ξ̂" to --ξ̃--  
Line 38, change "ξ" to --ξ̃--  
Line 40, after "assign" change "a" to --the--  
Line 42, after "and" remove [.]  
Line 42, before "best" change "Hence" to --hence--

Column 3

Line 12, change "Raleigh" to --Rayleigh--  
Lines 17 & 18, change "according to the invention as claimed in claim 1," to --in the first aspect of the present invention, there is provided--  
Line 34, after "each" change "slot." to --slot, and--  
Between lines 34 & 35, insert a new sub-paragraph with the text --the power of the data symbols and pilot symbols is controlled on a slot by slot basis.--  
Line 35, change "According to the invention as claimed in claim 2," to --In the second aspect of the present invention there is provided--  
Line 39, change "comprises:" to --comprising:--  
Line 63, change "According to the invention as claimed in claim 3," to --In the third aspect of the present invention, there is provided--  
Line 65, change "comprises:" to --comprising:--

MAILING ADDRESS OF SENDER:

PATENT NO. 6,757,272 B1

Adrian J. Lee  
Workman Nydegger  
1000 Eagle Gate Tower  
60 East South Temple  
Salt Lake City, Utah 84111

25 OCT 2004

UNITED STATES PATENT AND TRADEMARK OFFICE  
**CERTIFICATE OF CORRECTION**

PATENT NO. : 6,757,272 B1  
DATED : June 29, 2004  
INVENTOR(S) : Sadayuki Abeta et al.

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

Column 4

Line 29, change "modulating" to --demodulating--  
Lines 33 & 34, change "According to the invention as claimed in claim 4, in the CDMA transceiver as claimed in claim 3, he" to --Here the--  
Line 35, change "further comprises" to --may further comprise--  
Lines 38 & 39, change "According to the invention as claimed in claim 5, in the CDMA transceiver as claimed in claim 4," to --Here--  
Line 40, change "further comprises" to --may further comprise--  
Lines 44 & 45, change "According to the invention as claimed in claim 6, in the CDMA transceiver as claimed in any one of claims 3-5," to --Here--  
Line 46, change "further comprises" to --may further comprise--  
Lines 50 & 51, remove [transmits the spread combined symbol sequence]  
Line 51, before "power" change "he" to --the--  
Lines 53 & 54, change "According to the invention as claimed in claim 7, in the equipment as claimed in any one of claims 1-6," to --Here--  
Line 55, before "controlled" change "is" to --may be--  
Lines 57 & 58, change "According to the invention as claimed in claim 8, in the equipment as claimed in any one of claims 1-6," to --Here--  
Line 60, after "sequence" change "is" to --may be--  
Line 62, after "sequence" change "is" to --may be--  
Lines 63 & 64, change "According to the invention as claimed in claim 9, in the equipment as claimed in any one of claims 1-8," to --Here--  
Line 65, before "consist" insert --may--  
Lines 66 & 67, change "According to the invention as claimed in claim 10, in the equipment as claimed in any one of claims 1-9," to --Here--

MAILING ADDRESS OF SENDER:

PATENT NO. 6,757,272 B1

Adrian J. Lee  
Workman Nydegger  
1000 Eagle Gate Tower  
60 East South Temple  
Salt Lake City, Utah 84111

25 OCT 2004

UNITED STATES PATENT AND TRADEMARK OFFICE  
**CERTIFICATE OF CORRECTION**

PATENT NO. : 6,757,272 B1  
DATED : June 29, 2004  
INVENTOR(S) : Sadayuki Abeta et al.

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

**Column 5**

Lines 6 & 7, change "According to the invention as claimed in claim 11, in the equipment as claimed in any one of claims 1-10," to --Here--  
Line 10, change "According to the invention as claimed in claim 12," to --In the fourth aspect of the present invention, there is provided--  
Line 13, after "symbols," change "comprises" to --comprising--  
Line 21, before "wherein" begin a new sub-paragraph  
Line 23, after "each" change "slot." to --slot, and--  
Between lines 23 & 24, insert a new sub-paragraph with the text --the power of the data symbols and pilot symbols is controlled on a slot by slot basis.--  
Line 24, change "According to the invention as claimed in claim 13," to --In the fifth aspect of the present invention, there is provided--  
Line 28, after "spread," change "comprises" to --comprising--  
Line 51, change "According to the invention as claimed in claim 14," to --In the sixth aspect of the present invention, there is provided--  
Line 52, after "method" change "comprises" to --comprising--

**Column 6**

Line 19, after the last paragraph of the section entitled "DISCLOSURE OF THE INVENTION" and before the section entitled "BRIEF DESCRIPTION OF DRAWINGS" insert the following paragraphs:

--In the seventh aspect of the present invention, there is provided a channel estimation unit for obtaining channel estimates of data symbols from pilot symbols in a combined symbol sequence which has a plurality of slots and includes the data symbols and the pilot symbols, said channel estimation unit comprising:  
means for locating the pilot symbols in the combined symbol sequence;

MAILING ADDRESS OF SENDER:

PATENT NO. 6,757,272 B1

Adrian J. Lee  
Workman Nydegger  
1000 Eagle Gate Tower  
60 East South Temple  
Salt Lake City, Utah 84111

25 OCT 2004

UNITED STATES PATENT AND TRADEMARK OFFICE  
**CERTIFICATE OF CORRECTION**

PATENT NO. : 6,757,272 B1  
DATED : June 29, 2004  
INVENTOR(S) : Sadayuki Abeta et al.

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

means for generating pilot blocks by extracting the pilot symbols from two or more slots in the combined symbol sequence in accordance with a located result; and

means for obtaining the channel estimates of the data symbols by calculating a weighted sum of averages of the pilot symbols in the individual pilot blocks,

wherein a magnitude of weighting differs between at least two data symbols in each slot, and when obtaining the channel estimates of the data symbols in an  $n$ th slot in the combined symbol sequence, where  $n$  is an integer, the pilot blocks are generated from  $(n-K+1)$ th slot to  $(n+K)$ th slot in the combined symbol sequence, where  $K$  is a natural number.

In the eighth aspect of the present invention, there is provided a channel estimation method of obtaining channel estimates of data symbols from pilot symbols in a combined symbol sequence which has a plurality of slots and includes the data symbols and the pilot symbols, said channel estimation method comprising the steps of:

locating the pilot symbols in the combined symbol sequence;

generating pilot blocks by extracting the pilot symbols from two or more slots in the combined symbol sequence in accordance with a located result; and

obtaining the channel estimates of the data symbols by calculating a weighted sum of averages of the pilot symbols in the individual pilot blocks.

wherein a magnitude of weighting differs between at least two data symbols in each slot, and when obtaining the channel estimates of the data symbols in an  $n$ th slot in the combined symbol sequence, where  $n$  is an integer, the pilot blocks are generated from  $(n-K+1)$ th slot to  $(n+K)$ th slot in the combined symbol sequence, where  $K$  is a natural number.--

MAILING ADDRESS OF SENDER:

PATENT NO. 6,757,272 B1

Adrian J. Lee  
Workman Nydegger  
1000 Eagle Gate Tower  
60 East South Temple  
Salt Lake City, Utah 84111

25 OCT 2004



UNITED STATES PATENT AND TRADEMARK OFFICE  
**CERTIFICATE OF CORRECTION**

PATENT NO. : 6,757,272 B1  
DATED : June 29, 2004  
INVENTOR(S) : Sadayuki Abeta et al.

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

Column 8

Line 1, change "ξ" to  $\tilde{\xi}$  --  
Line 2, before "obtained" change "is" to --are--  
Line 4, change "ξ" to  $\tilde{\xi}$  --  
Line 7, change "ξ" to  $\tilde{\xi}$  --

Line 10, change " $\tilde{\xi}(m,n) = \sum_{i=-k+1}^K \alpha(m,i) \cdot \tilde{\xi}(n+i)$ " to  $\tilde{\xi}(m,n) = \sum_{i=-k+1}^K \alpha(m,i) \cdot \tilde{\xi}(n+i)$  --

Line 56, after "receiving" change "processing" to --process--

Column 9

Line 10, change "ξ" to  $\tilde{\xi}$  --  
Line 14, change "ξ" to  $\tilde{\xi}$  --  
Line 18, after "carries" insert --out the in-phase combining of the compensated data--  
Line 40, after "spreader" change "727," to --727.--  
Line 46, after "transmitting" change "processing" to --process--

Column 10

Line 18, after "section" change "840," to --840.--

MAILING ADDRESS OF SENDER:

PATENT NO. 6,757,272 B1

Adrian J. Lee  
Workman Nydegger  
1000 Eagle Gate Tower  
60 East South Temple  
Salt Lake City, Utah 84111

25 OCT 2004

UNITED STATES PATENT AND TRADEMARK OFFICE  
**CERTIFICATE OF CORRECTION**

PATENT NO. : 6,757,272 B1  
DATED : June 29, 2004  
INVENTOR(S) : Sadayuki Abeta et al.

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

Column 11

Line 41, before "data" change "thee" to --the--  
Line 41, before "pilot" change "tile" to --the--  
Line 45, after "generating" change "Pilot" to --pilot--  
Line 54, change "integers" to --integer--

Column 12

Line 15, before "for" change "mean" to --means--  
Line 34, before "differs" change "weightlting" to --weighting--  
Line 54, after "by" change "de spreading" to --de-spreading--

Column 13

Line 44, change "clam" to --claim--

Column 14

Line 21, before "located" change "tie" to --the--  
Line 38, after "and" begin a new sub-paragraph.

MAILING ADDRESS OF SENDER:

PATENT NO. 6,757,272 B1

Adrian J. Lee  
Workman Nydegger  
1000 Eagle Gate Tower  
60 East South Temple  
Salt Lake City, Utah 84111

25 OCT 2004

UNITED STATES PATENT AND TRADEMARK OFFICE  
**CERTIFICATE OF CORRECTION**

PATENT NO. : 6,757,272 B1  
DATED : June 29, 2004  
INVENTOR(S) : Sadayuki Abeta et al.

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

Column 1

Line 22, change "Raleigh" to --Rayleigh--  
Line 42, change "Raleigh" to --Rayleigh--

Column 2

Line 2, change "Raleigh" to --Rayleigh--  
Line 13, after "estimates" change "ξ" to --ξ̃--  
Line 31, after "slots" change "are" to --to be--  
Line 31, after "estimates" change "ξ̂" to --ξ̃--  
Line 38, change "ξ" to --ξ̃--  
Line 40, after "assign" change "a" to --the--  
Line 42, after "and" remove [.]  
Line 42, before "best" change "Hence" to --hence--

Column 3

Line 12, change "Raleigh" to --Rayleigh--  
Lines 17 & 18, change "according to the invention as claimed in claim 1," to --in the first aspect of the present invention, there is provided--  
Line 34, after "each" change "slot." to --slot, and--  
Between lines 34 & 35, insert a new sub-paragraph with the text --the power of the data symbols and pilot symbols is controlled on a slot by slot basis.--  
Line 35, change "According to the invention as claimed in claim 2," to --In the second aspect of the present invention there is provided--  
Line 39, change "comprises:" to --comprising:--  
Line 63, change "According to the invention as claimed in claim 3," to --In the third aspect of the present invention, there is provided--  
Line 65, change "comprises:" to --comprising:--

MAILING ADDRESS OF SENDER:

PATENT NO. 6,757,272 B1

Adrian J. Lee  
Workman Nydegger  
1000 Eagle Gate Tower  
60 East South Temple  
Salt Lake City, Utah 84111

25 OCT. 2004

UNITED STATES PATENT AND TRADEMARK OFFICE  
**CERTIFICATE OF CORRECTION**

PATENT NO. : 6,757,272 B1  
DATED : June 29, 2004  
INVENTOR(S) : Sadayuki Abeta et al.

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

Column 4

Line 29, change "modulating" to --demodulating--  
Lines 33 & 34, change "According to the invention as claimed in claim 4, in the CDMA transceiver as claimed in claim 3, he" to --Here the--  
Line 35, change "further comprises" to --may further comprise--  
Lines 38 & 39, change "According to the invention as claimed in claim 5, in the CDMA transceiver as claimed in claim 4," to --Here--  
Line 40, change "further comprises" to --may further comprise--  
Lines 44 & 45, change "According to the invention as claimed in claim 6, in the CDMA transceiver as claimed in any one of claims 3-5," to --Here--  
Line 46, change "further comprises" to --may further comprise--  
Lines 50 & 51, remove [transmits the spread combined symbol sequence]  
Line 51, before "power" change "he" to --the--  
Lines 53 & 54, change "According to the invention as claimed in claim 7, in the equipment as claimed in any one of claims 1-6," to --Here--  
Line 55, before "controlled" change "is" to --may be--  
Lines 57 & 58, change "According to the invention as claimed in claim 8, in the equipment as claimed in any one of claims 1-6," to --Here--  
Line 60, after "sequence" change "is" to --may be--  
Line 62, after "sequence" change "is" to --may be--  
Lines 63 & 64, change "According to the invention as claimed in claim 9, in the equipment as claimed in any one of claims 1-8," to --Here--  
Line 65, before "consist" insert --may--  
Lines 66 & 67, change "According to the invention as claimed in claim 10, in the equipment as claimed in any one of claims 1-9," to --Here--

MAILING ADDRESS OF SENDER:

PATENT NO. 6,757,272 B1

Adrian J. Lee  
Workman Nydegger  
1000 Eagle Gate Tower  
60 East South Temple  
Salt Lake City, Utah 84111

25 OCT 2004

UNITED STATES PATENT AND TRADEMARK OFFICE  
**CERTIFICATE OF CORRECTION**

PATENT NO. : 6,757,272 B1  
DATED : June 29, 2004  
INVENTOR(S) : Sadayuki Abeta et al.

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

**Column 5**

Lines 6 & 7, change "According to the invention as claimed in claim 11, in the equipment as claimed in any one of claims 1-10," to --Here--  
Line 10, change "According to the invention as claimed in claim 12," to --In the fourth aspect of the present invention, there is provided--  
Line 13, after "symbols," change "comprises" to --comprising--  
Line 21, before "wherein" begin a new sub-paragraph  
Line 23, after "each" change "slot." to --slot, and--  
Between lines 23 & 24, insert a new sub-paragraph with the text --the power of the data symbols and pilot symbols is controlled on a slot by slot basis.--  
Line 24, change "According to the invention as claimed in claim 13," to --In the fifth aspect of the present invention, there is provided--  
Line 28, after "spread," change "comprises" to --comprising--  
Line 51, change "According to the invention as claimed in claim 14," to --In the sixth aspect of the present invention, there is provided--  
Line 52, after "method" change "comprises" to --comprising--

**Column 6**

Line 19, after the last paragraph of the section entitled "DISCLOSURE OF THE INVENTION" and before the section entitled "BRIEF DESCRIPTION OF DRAWINGS" insert the following paragraphs:

--In the seventh aspect of the present invention, there is provided a channel estimation unit for obtaining channel estimates of data symbols from pilot symbols in a combined symbol sequence which has a plurality of slots and includes the data symbols and the pilot symbols, said channel estimation unit comprising:  
means for locating the pilot symbols in the combined symbol sequence;

MAILING ADDRESS OF SENDER:

PATENT NO. 6,757,272 B1

Adrian J. Lee  
Workman Nydegger  
1000 Eagle Gate Tower  
60 East South Temple  
Salt Lake City, Utah 84111

25 OCT 2004

UNITED STATES PATENT AND TRADEMARK OFFICE  
**CERTIFICATE OF CORRECTION**

PATENT NO. : 6,757,272 B1  
DATED : June 29, 2004  
INVENTOR(S) : Sadayuki Abeta et al.

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

means for generating pilot blocks by extracting the pilot symbols from two or more slots in the combined symbol sequence in accordance with a located result; and

means for obtaining the channel estimates of the data symbols by calculating a weighted sum of averages of the pilot symbols in the individual pilot blocks,

wherein a magnitude of weighting differs between at least two data symbols in each slot, and when obtaining the channel estimates of the data symbols in an  $n$ th slot in the combined symbol sequence, where  $n$  is an integer, the pilot blocks are generated from  $(n-K+1)$ th slot to  $(n+K)$ th slot in the combined symbol sequence, where  $K$  is a natural number.

In the eighth aspect of the present invention, there is provided a channel estimation method of obtaining channel estimates of data symbols from pilot symbols in a combined symbol sequence which has a plurality of slots and includes the data symbols and the pilot symbols, said channel estimation method comprising the steps of:

locating the pilot symbols in the combined symbol sequence;

generating pilot blocks by extracting the pilot symbols from two or more slots in the combined symbol sequence in accordance with a located result; and

obtaining the channel estimates of the data symbols by calculating a weighted sum of averages of the pilot symbols in the individual pilot blocks.

wherein a magnitude of weighting differs between at least two data symbols in each slot, and when obtaining the channel estimates of the data symbols in an  $n$ th slot in the combined symbol sequence, where  $n$  is an integer, the pilot blocks are generated from  $(n-K+1)$ th slot to  $(n+K)$ th slot in the combined symbol sequence, where  $K$  is a natural number.—

MAILING ADDRESS OF SENDER:

PATENT NO. 6,757,272 B1

Adrian J. Lee  
Workman Nydegger  
1000 Eagle Gate Tower  
60 East South Temple  
Salt Lake City, Utah 84111

25 OCT 2004

UNITED STATES PATENT AND TRADEMARK OFFICE  
**CERTIFICATE OF CORRECTION**

PATENT NO. : 6,757,272 B1  
DATED : June 29, 2004  
INVENTOR(S) : Sadayuki Abeta et al.

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

Column 8

Line 1, change "ξ" to  $-\tilde{\xi}-$

Line 2, before "obtained" change "is" to  $-\text{are}-$

Line 4, change "ξ" to  $-\tilde{\xi}-$

Line 7, change "ξ" to  $-\tilde{\xi}-$

Line 10, change " $\tilde{\xi}(m,n) = \sum_{i=-k+1}^K \alpha(m,i) \cdot \tilde{\xi}(n+i)$ " to  $-\tilde{\xi}(m,n) = \sum_{i=-k+1}^K \alpha(m,i) \cdot \tilde{\xi}(n+i)-$

Line 56, after "receiving" change "processing" to  $-\text{process}-$

Column 9

Line 10, change "ξ" to  $-\tilde{\xi}-$

Line 14, change "ξ" to  $-\tilde{\xi}-$

Line 18, after "carries" insert  $-\text{out the in-phase combining of the compensated data}-$

Line 40, after "spreader" change "727," to  $-727.-$

Line 46, after "transmitting" change "processing" to  $-\text{process}-$

Column 10

Line 18, after "section" change "840," to  $-\text{840.}-$

MAILING ADDRESS OF SENDER:

PATENT NO. 6,757,272 B1

Adrian J. Lee  
Workman Nydegger  
1000 Eagle Gate Tower  
60 East South Temple  
Salt Lake City, Utah 84111

25 OCT 2004

UNITED STATES PATENT AND TRADEMARK OFFICE  
**CERTIFICATE OF CORRECTION**

PATENT NO. : 6,757,272 B1  
DATED : June 29, 2004  
INVENTOR(S) : Sadayuki Abeta et al.

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

Column 11

Line 41, before "data" change "thee" to --the--  
Line 41, before "pilot" change "tile" to --the--  
Line 45, after "generating" change "Pilot" to --pilot--  
Line 54, change "integers" to --integer--

Column 12

Line 15, before "for" change "mean" to --means--  
Line 34, before "differs" change "weightlting" to --weighting--  
Line 54, after "by" change "de spreading" to --de-spreading--

Column 13

Line 44, change "clam" to --claim--

Column 14

Line 21, before "located" change "tie" to --the--  
Line 38, after "and" begin a new sub-paragraph.

MAILING ADDRESS OF SENDER:

PATENT NO. 6,757,272 B1

Adrian J. Lee  
Workman Nydegger  
1000 Eagle Gate Tower  
60 East South Temple  
Salt Lake City, Utah 84111

25 OCT 2004